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Conference Abstract

From Biodiversity Observation Networks to Datasets and Workflows Supporting Biodiversity Indicators, a French Biodiversity Observation Network (BON) Essential Biodiversity Variables (EBV) Operationalization Pilot using Galaxy and Ecological Metadata Language

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Abstract

Integration of biological data with different ecological scales is complex! The biodiversity community (scientists, policy makers, managers, citizen, NGOs) needs to build a framework of harmonized and interoperable data from raw, heterogeneous and scattered datasets. Such a framework will help observation, measurement and understanding of the spatio-temporal dynamic of biodiversity from local to global scales. One of the most relevant approaches to reach that aim is the concept of Essential Biodiversity Variables

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(EBV). As we can potentially extract a lot of information from raw datasets sampled at different ecological scales, the EBV concept represents a useful leverage for identifying appropriate data to be collated as well as associated analytical workflows for processing these data.

Thanks to FAIR data and source code implementation (Findable, Accessible, Interoperability, Reusable), it is possible to make a transparent assessment of biodiversity by generating operational biodiversity indicators (that can be reused / declined) through the EBV framework, and help designing or improving biodiversity monitoring at various scales.

Through the BiodiFAIRse GO FAIR implementation network, we established how ecological and environmental sciences can benefit from existing open standards, tools and platforms used by European, Australian and United States infrastructures, particularly regarding the Galaxy platform for code sources accessiblility and the DataOne network of data catalogs and the Ecological Metadata Language standard for data management. We propose that these implementation choices can help fight the biodiversity crisis by supporting the important mission of GEO BON (Group on Earth Observation Biodiversity Observation Network): “Improve the acquisition, coordination and delivery of biodiversity observations and related services to users including decision makers and the scientific community” (GEO BON 2022).

Keywords

GEO BON, French BON, PNDB, Galaxy-E, EML, data, metadata

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